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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,946	04/19/2001	Nicola Zatelli	854063.496D1	1177
500	7590	03/25/2004	EXAMINER	
SEED INTELLECTUAL PROPERTY LAW GROUP PLLC			HA, NATHAN W	
701 FIFTH AVE			ART UNIT	
SUITE 6300			PAPER NUMBER	
SEATTLE, WA 98104-7092			2814	

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/838,946	<b>Applicant(s)</b> ZATELLI ET AL.	
	<b>Examiner</b> Nathan W. Ha	<b>Art Unit</b> 2814	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harari, US 5,095,344, and in view of Freeman US 4,810,673.

In regard to claims 1 and 3, in fig. 5d, for example, Harari discloses a method of forming an electronic device, comprising the steps of:

forming a first doped region 560a in a first portion of a body of semiconductor material;

forming a first oxide region 564a, in fig. 5b, having a first area above the body;

forming a gate region of polycrystalline 504a above the body and extending at least over a portion of the first oxide region;

simultaneously with the step of forming a first doped region, forming a second doped region 560b in a second portion of the body, the second doped region having the same type and conductivity level as the first doped region, p+;

simultaneously with the step of forming the first oxide region, forming a second oxide region 564b, the second oxide region having the same thickness and a greater area than the first oxide region including 565a;

simultaneously with the step of forming a gate region, forming a polycrystalline region 504b located above the body and extending at least over a portion of the second oxide region.

Harari, however, does not expressly mention measuring the oxide thickness where it is overlaid by the gate region. It should be noted that, this thickness is generally determined during the process of making a MOS device, for example, since it determines the device's characteristics. It's normally denoted as  $t_{ox}$ . For instance, Freeman, in fig. 3, for example, discloses an analogous device including gate 306, and oxide layer 308. This oxide layer is being controlled and measured since such thick poly will increase gate coupling ratio, which has the attendant effect of degrading program and erasing performance of the memory cell.

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to control the oxide layer as taught by Freeman in order to improve the device's characteristics since such thick poly will increase gate coupling ratio, which has the attendant effect of degrading program and erasing performance of the memory cell.

In regard to claim 2, Harari further discloses that after the steps of forming the gate region, performing the step of forming a first and second re-oxidation region 566a and 566b. See fig. 5c.

In regard to claim 4, Freeman discloses using an ellipsometer to measure the thickness of the oxide. See col. 6, lines 30-32.

In regard to claim 5, the polycrystalline region extends along a closed line. See fig. 5d.

In regard to claim 6, the polycrystalline region extends along a perimeter of a regular quadrilateral. See Harari's fig. 6a.

In regard to claims 7-9, the above combination does not expressly mention the shape and dimensions of the device.

At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the device with a square with dimensions, accordingly, because applicant has not disclosed that this shape and dimensions provide an advantage, is used for a particular purpose, or solve a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with either shape because they perform the same function of a gate structure over a body substrate.

Therefore, it would have been obvious to one of ordinary skill in the art to modify The above combination in order to obtain the invention as specify in the above claims.

Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed.

Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) .

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

In regard to claim 10, the unsatisfied devices would be inherently discarded after the test.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2814

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nathan Ha  
March 18, 2004

Wael Fahmy  
SPC 2014